1862MNRAS..22..295H

On the Appearance of Saturn's Ring, 1862, *May* 13, $8^h\ 45^m$ *G.M.T.* By W. R. Birt, Esq.

On the evening above specified I had an opportunity of observing *Saturn* at this interesting epoch, with an 8-inch object-glass, which Mr. Slater is now constructing for T. Coventry, Esq., and also with the large refractor of nearly 15 inches aperture.

The state of the atmosphere was not over favourable for so delicate an observation, nevertheless, during fits of good definition, which were not of long duration, I saw very distinctly the fine ansæ broken into minute points or beads of light. It was difficult to get a sufficiently steady interval to count these beads, but the impression I had as to the number of the most prominent was that there were about seven, four on the following and three on the preceding ansa; Mr. Slater noticed five on the following ansa. The following ansa was the longest. On one occasion I obtained a very fine view, when they appeared as *irregularities or projections on the illuminated plane of the ring*, as if such projections were more directly illuminated, and consequently reflected more light than the obliquely illuminated plane of the ring. I did not obtain a confirmation of this interesting appearance. The ring of the shadow formed a somewhat narrow dusky line across the disk, the northern portion being rather the darkest. Mr. Talmage, who was present, saw the fine line of light separating the two, but when I inspected the planet the atmosphere was not sufficiently fine to allow me to witness this interesting phenomenon. Mr. Slater, who observed the beads with a 10-inch object-glass on the 8th of May, at Sheffield, witnessed the phenomena above described, the only exceptions being the number of beads on the following ansa, and the number on the preceding, which he did not estimate.

On the 1st of May Mr. Slater witnessed the transit of the shadow of *Titan* across the disk of the planet.

On some Phenomena attending the Disappearance of Saturn's Ring, May 19*th*, 1862. By W. Huggins, Esq.

The following notes may perhaps be of some value in support or otherwise of more complete observations of *Saturn*, during a period of so much interest as that through which the planet has just passed.

May 2d. A brief separation of the clouds showed *Saturn* with two bright dots of light upon the eastern ansa of the ring. These were at first taken for satellites. As the haze thickened

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and the ansæ faded from view, the contrast between these bright points and the fading ring increased until the ring was lost, when the dots of light alone continued visible as faint and badly defined satellites. As there were no satellites near these positions on that evening, these appearances corresponded probably to the "bright points" seen on former occasions. Vide *Monthly Notices*, vol. x. p. 47.

May 12th. The points of light were again faintly visible, and were best seen when the eye was not directed to them. Passing masses of haze brought them out in strong contrast with the ring, as the pale light of the ansa seemed to suffer greater diminution in proportion than the brighter points.

May 13th. On this evening they were distinctly traced on the eastern ansa to correspond in position with the inner and outer edges of the extremity of the ring. One was seen at the termination of the dark space between the ball and the ring, and the other at the extremity of the visible portion of the ring.

On the 16th the ansa still continued steadily visible, but no indication of these bright points could be seen. The colour of the ansæ, that is, of the surface of the ring seen very obliquely, was a deep bluish purple. A badly defined line of faint shading was suspected across the ball close to the southern edge of the projected ring, in the position in which the shadow of the ring was looked for.

Since that date up to this time, June 10th, no trace whatever of the expected shadow of the ring upon the ball can be detected, though carefully searched for.

On the 17th, 18th, and 19th of May, the ansæ were still seen, though with increasing difficulty, and therefore never totally disappeared.

On the 20th the ansæ appeared of a beautiful dark blue colour, scarcely distinguishable from the dark blue of the sky, which contrasted strongly with the yellow light of the ball.

Upon several occasions, May 18th especially, little roughnesses, resembling miniature satellite-shadows, were suspected on the southern edge of the ring upon the ball, but in every instance these disappeared entirely with the employment of powers from 600 to 950. With these powers, in moments of best vision, the edge of the ring was seen perfectly even and unbroken.

May 17th was cloudy, but at $11^h\ 30^m$ the shadow of *Titan* was seen projecting rather more than half its diameter from the northern edge of the ring.

June 2d. The weather was equally unfavourable, at $10^h\ 45^m$ a brief separation of the clouds showed *Titan's* shadow in contact with the southern edge of the projected ring.

Object-glass 8 inches diameter. Power from 200 to 950.

June 11, 1862, *Upper Tulse Hill.*

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